8 Detailed Description of the Preferred Design Concept

Introduction

8.1 This chapter describes the Preferred Design Concept in more detail, block-by-block, with additional explanation on the considerations made by the Design Team on elements of the design.

General Approach

- 8.2 The Preferred Design Concept proposes a consistent, yet flexible road design that can accommodate different operations and programming. The roadway and streetscape would look and feel the same throughout the corridor but can be configured to accommodate pedestrian priority, and one-way and two-way vehicular operations during the daytime. The Preferred Design Concept does not "lock-in" the future operations of any block. Operations can be adjusted, based on the future needs of downtown Yonge Street.
- 8.3 The following design elements are consistent for the full length of the corridor from College / Carlton Street to Queen Street:
 - 6.6m wide, two lane roadway with mountable curbs and vehicular unit paving
 - 2.7m wide furnishing, planting, café and curbside activity zone (the "activity zone") on each side of the street
 - 4.0m wide (minimum) pedestrian clearway with pedestrian unit paving, on each side of the street
- 8.4 From College / Carlton Street to Gerrard Street, the right-of-way is six metres wider than the rest of the corridor. The character of the adjacent properties is also less focused on tourism and entertainment than those blocks to the south of Gerrard Street. This additional space has been used for separated cycle tracks on both sides of the street, providing links to the existing cycling facilities on Gerrard Street.







Figure 8-2: Preferred Design Concept: Typical cross-section with bicycle lanes

- 8.5 Discussions with TTC indicate that they would operate a night-bus service along the corridor when the subway is closed, and therefore overnight (from 1 a.m. to 6 a.m.), the two-lane cross section would be open to buses.
- 8.6 The overarching theme of the Preferred Design Concept is that from Queen Street to College / Carlton Street, Yonge Street is a place focused on the movement and experience of people walking, cycling and connecting to transit, rather than a way to get across the downtown core by driving. This is achieved by the increased sidewalk widths and landscaping, reduced driving lanes and the flexibility to be configured to accommodate pedestrian priority, and one-way and twoway vehicular operations during the daytime.

Parking, loading and stopping

8.7 At present Yonge Street has a general 'No Parking' restriction, supplemented by 'No Stopping' between 7.30 a.m. and 9.30 a.m. Monday to Friday. It is also a designated 'Snow Route'. The 'No Parking' restriction allows for driver-attended loading and unloading, passenger pick-up and drop-off and ride hail/taxi. The operational aspects of the Preferred Design Concept will be subject to further consultation and refinement throughout the detailed design process, including recommended by-law and traffic operations. As with all operational initiatives implemented by the City of Toronto, the changes would be monitored, and further adjustments could continue to be made as needed to maintain effective street operations.

Speed limit

8.8 At present Yonge Street has a posted 40km/h speed limit, commensurate with its role as a four lane through route. A 30m/h speed limit could be implemented, appropriate to the change in function and character of Yonge Street.

The Preferred Design Concept – Block-by-block

College Street to Gerrard Street

- 8.9 College Street to Gerrard Street features a 6.6m roadway with separated one-way cycle tracks on either side of the roadway. This section of Yonge Street, at 26m, is wider than the 20m general widths elsewhere in the corridor. The additional width allows for separated cycle tracks to be included in the cross-section, in addition to the standard design elements for pedestrian clearways, furnishing zones and roadway.
- 8.10 The Preferred Design Concept anticipates the current TTC project that is providing additional elevators and concourse areas to the College subway station. The new entrances and altered concourse areas do not directly affect the Preferred Design Concept, however, the project would remove the central median and centrally located street trees between Granby Street and College Street. Cycle facilities are proposed as one-way cycle tracks adjacent to the roadway, separated from the roadway by a 0.5m roll-curb. At College Street, the separated facility would end at the intersection signals. At Gerrard Street, the separated facility would similarly end at the intersection signals with, subject to detailed design and assessment, provision for a bicycle interval. The separated cycle facility would connect with the bicycle lanes already present on Gerrard Street, with bike turn boxes for turning movements.
- 8.11 Servicing for properties fronting this block is generally carried out from loading and servicing areas to the rear of buildings. Curbside activity zones would be subject to further consultation and refinement throughout the detailed design process.
- 8.12 Pedestrian flows in this block are anticipated to predominantly consist of the general north-south flow along the corridor, served by the proposed sidewalk clearways in the Preferred Design Concept.
- 8.13 Additional significant pedestrian flows would be:
 - To/from Granby Street through the pedestrian-only Granby Parkette
 - To/from McGill Street through the pedestrian-only McGill Parkette

- To/from College Park, between the Aura building and the College Park building.
- 8.14 Previous analysis completed by the City of Toronto identified an existing need for a signalcontrolled crossing between McGill Street and College Park, and this is included in the Preferred Design Concept.
- 8.15 Transit provision on this section is limited to bus stops for the proposed overnight night-bus service, in the northbound direction located at the Yonge Street/Carlton Street intersection and in the southbound direction located at the Yonge Street/Gerrard Street intersection. Both stops would be located in between the cycle tracks and the sidewalk clearway, with the boarding and alighting area shared with cyclists. This shared arrangement acknowledges that cycle flows are anticipated to be very low during the periods of bus operation. The design of the cycle lines will be developed in line with the City's guidelines and standards at the detailed design phase of the study taking account of appropriate curb requirements for serving buses. Transit provision for east-west services using College Street & Carlton Street is unaffected by the proposals.
- 8.16 Provision for accessible transit would remain the same as the existing situation, with Wheel-Trans vehicles stopping on the street as required, subject to any future operational strategy. There is no current designated Wheel-Trans stop for College Station.
- 8.17 The design element of the furnishing, planting and café zone along this section would not have street trees planted in the ground between Granby Street and Carlton Street due to the shallow depth of the underground subway College Station.

Figure 8-3: Preferred Design Concept Plan: College Street to Gerrard Street



Bus Stop

Tree

0 Tour Bus Loading

LEGEND

0

C

Gerrard Street to Walton Street

- 8.18 Gerrard Street to Walton Street would have a 6.6m roadway. Walton Street is currently a 'dead end' with limited vehicular movements. However, there is a development proposal fronting Walton Street that would establish a link between Bay Street and Yonge Street. This would be used by traffic accessing the development. Discussions have been held with the owner of the development site to establish that the traffic using the reconfigured Walton Street is intended to remain at a low volume.
- 8.19 Servicing for properties fronting this block is generally carried out from loading and servicing areas to the rear of buildings, accessed from either Walton Street or O'Keefe Lane.
- 8.20 Pedestrian flows in this block would consist of the general north-south movement along the corridor, served by the proposed sidewalk clearways in the Preferred Design Concept. The short length of the block, together with the predicted high pedestrian flows and the proposed bus stop has resulted in the omission of the furnishing, planting and café zone in this section.
- 8.21 A transit stop on this section for the proposed overnight night-bus service is located at the Yonge Street/Gerrard Street intersection for the northbound service. Transit provision for east-west services using Gerrard Street is unaffected.
- 8.22 Provision for accessible transit would remain the same as the existing situation, subject to any future operational strategy.

Figure 8-4: Preferred Design Concept Plan: Gerrard Street to Walton Street





Walton Street to Elm Street

8.23 Walton Street to Elm Street consists of a 6.6m roadway with sidewalks and furnishing zones on each side of the road to support cafés, planting and seating. Servicing for properties fronting this block is generally carried out from service yards to the rear of buildings, or on side-streets, with the exception of the retail unit operating as a McDonald's restaurant. Pedestrian flows in this block would consist of the general north-south movement along the corridor. There are no transit stops on this section for the proposed overnight night-bus service.

Figure 8-5: Preferred Design Concept Plan: Walton Street to Elm Street





Elm Street to Edward Street

- 8.24 Elm Street to Edward Street consists of a 6.6m roadway with sidewalks and furnishing zones on each side of the road to support cafés, planting and seating. Gould Street currently terminates at O'Keefe Lane. It would remain to provide access for the Ryerson University Student Learning Centre and also the busy loading dock that is accessed from the south side of Gould Street.
- 8.25 Servicing for properties fronting Yonge Street along this block is generally carried out from service yards to the rear of buildings accessed from Elm Street, Gould Street and Edward Street, or from the curbside on these same streets. There are two existing short sections of 'Courier Delivery' zones at the ends of both Elm Street and Edward Street.
- 8.26 Pedestrian flows in this block would consist of the general north-south movement along the corridor, plus a significant movement along Gould Street and to a lesser extent Elm Street and Edward Street. These movements are served by the proposed sidewalk clearways in the Preferred Design Concept. The predicted high pedestrian flows on this block have led to the retention of the traffic signals and controlled pedestrian crossings at the Yonge Street/Gould street intersection.
- 8.27 There are no transit stops on this section for the proposed overnight night-bus service, although the service would use the roadway.
- 8.28 Provision for accessible transit would remain the same is the existing situation, subject to any future operational strategy.

Figure 8-6: Preferred Design Concept Plan: Elm Street to Edward Street





Edward Street to Dundas Square

- 8.29 Edward Street to Dundas Square consists of a 6.6m roadway with sidewalks and furnishing zones on each side of the road to support cafés, planting and seating.
- 8.30 Servicing for properties fronting this block is generally carried out from service yards to the rear of buildings, or on side-streets. Access to the Yonge-Dundas Square for special events is currently made from Yonge Street. As the use of the Square is infrequent, it is proposed to retain this arrangement but with robust protocols and management in place to ensure this operates by exception only.
- 8.31 Access to the public parking garage located off Dundas Square will be considered as part of the future operational strategy.
- 8.32 Transit provision on this section consists of bus stops for the proposed overnight night bus service, located at the Yonge Street/Dundas Street intersection. Transit provision for east-west services using Dundas Street is unaffected.
- 8.33 Provision for accessible transit would remain the same as the existing situation, subject to any future operational strategy.

Figure 8-7: Preferred Design Concept Plan: Edward Street to Dundas Square



Dundas Square to Shuter Street

- 8.34 Dundas Square to Shuter Street consists of a 6.6m roadway with sidewalks and furnishing zones on each side of the road to support cafés, planting and seating.
- 8.35 The operation of Shuter Street as a two-way street, Dundas Square eastbound-only, and O'Keefe Lane northbound-only would remain unchanged.
- 8.36 Servicing for properties fronting Yonge Street along this block is generally carried out from loading and servicing areas to the rear of buildings accessed from Bay Street or O'Keefe Lane.
- 8.37 Pedestrian flows in this block would consist of the general north-south movement along the corridor and would be served by the proposed sidewalk clearways in the Preferred Design Concept. The predicted high ride hail use on this block has led to the retention of the mid-block traffic signal-controlled pedestrian crossing to the Eaton Centre.
- 8.38 There are no transit stops on this section for the proposed overnight night-bus service, although the service would use the roadway.
- 8.39 Provision for accessible transit would remain the same as the existing situation, subject to any future operational strategy.



Figure 8-8: Preferred Design Concept Plan: Dundas Square to Shuter Street

Shuter Street to Queen Street

- 8.40 Shuter Street to Queen Street consists of a 6.6m roadway with sidewalks and furnishing zones on each side of the road to support cafés, planting and seating.
- 8.41 The reduction in travel lanes on Yonge Street at the intersection with Queen Street has been used to provide additional sidewalk space and crossing widths for pedestrians.
- 8.42 Servicing for properties fronting Yonge Street along this block is generally carried out from loading and servicing areas to the rear of buildings accessed from Bay Street or O'Keefe Lane. However, some retail frontages at the south end of the block can only service from the front of the building on Yonge Street.
- 8.43 Pedestrian flows in this block would consist of the general north-south movement along the corridor and would be served by the proposed sidewalk clearways in the Preferred Design Concept.
- 8.44 Transit provision on this section consists of bus stops for the proposed overnight night bus service, located at the Yonge Street / Queen Street intersection. Transit provision for east-west services using Queen Street is unaffected.
- 8.45 Provision for accessible transit would remain the same as the existing situation, with Wheel-Trans vehicles stopping on street as required. The existing designated Wheel-Trans stop for Queen subway station is on Yonge Street, northbound, just to the north of Queen Street. This is proposed to remain at its current location.

Figure 8-9: Preferred Design Concept Plan: Shuter Street to Queen Street



Design Elements

Paving Surfaces

- 8.46 The paving materials chosen for the project can help to define the corridor as a pedestrian focussed environment. The detailed design process will formally identify the materials and colours to be used and establish a common theme across the various design elements. The project objective of elevating the street's form points towards the choice of high quality materials such as unit paving. This can also readily be specified to signal the various uses of the space.
- 8.47 As a city street and public area, the materials will also need to satisfy a wide range of requirements for Accessibility for Ontarians with Disabilities Act (AODA) compliance, ease of maintenance, durability, protection against slips and falls and underground utilities.

Curbs and tactile paving

8.48 The mountable curb provides greater crossing opportunities for people using mobility aids. The city standard tactile paving strip is cane detectable and has high colour contrast to signal the mountable curb to those with low or no vision. Yellow tactile indicators would be used to delineate transit stops. The pedestrian clearway would also be separate from the roadway by a 2.7m wide furnishing zone.

Roadway Design

8.49 In developing the Alternative Solutions and Alternative Design Concepts, the Design Team used road design criteria that balance the function of the street as a space shared by pedestrians, cyclists and vehicles with the needs of the emergency services, maintenance teams and access for TTC bus services. The key criteria used are set out in Table 8-1.

Design Element	Criteria
Posted speed	30kph
Lane width	2 x 3.3m without sharp deviations – for use by TTC buses
Curbside activity area (off-carriageway width)	2.4m
Offset to obstacles	0.5m
Pavement markings	At intersections and crossings only
Intersections	AODA compliant
Corner radii	Chosen against likely goods vehicle use and fully compliant with emergency services requirements

Table 8-1: Summary of Preliminary Design Criteria

Soft Landscape

8.50 The width of the corridor and the need to provide for a clear roadway and pedestrian clearways limits the opportunities for areas of soft landscaping. However, the uniformity of the corridor suits the inclusion of street trees, and these are proposed as a key design element to satisfy the Project Objective of fostering sustainability. They will define the pedestrian-focussed character of the space, provide continuity and give shade for pedestrians and the proposed patio and café areas.

8.51 The type of tree, spacing and planting details will be developed further in the detailed design process, building on expertise and knowledge within the City and also coordinated with the underground infrastructure.

Street Furniture

8.52 Appropriate street furniture will be an important part of the design, helping to define the pedestrian focus for the corridor and encourage use of the space as a destination rather than a thoroughfare. The overall approach to street furniture is to maximize pedestrian space and provide room for pedestrian-focussed amenities. This can be achieved by simplifying the provision of street furniture to the design element of the activity zone, which will also reduce visual and spatial clutter. The street furniture would be coordinated with the paving materials and in accordance with Toronto's Coordinated Street Furniture Program Design and Policy Guidelines. These guidelines also serve to ensure durability and maintenance standards meet City requirements.

Litter/Recycling Bins

8.53 The City's standard litter bin would be located and painted in coordination with light poles, benches and other street furniture. Bins would be sited, at a minimum, on every block and on both sides of the street.

Benches/Seating

8.54 Seating would be sited, at a minimum, on every block and on both sides of the street, however best practice guidelines recommend seating spaced no more than 30 metres apart for people with reduced mobility options. For accessibility considerations, it is important to provide some seating that offers both armrests and backrests and with enough clear space beside benches and seating to accommodate people using mobility aids, service animals or strollers.

Transit Shelters

8.55 The current design does not anticipate the use of transit shelters within Yonge Street.

Signage & Wayfinding

- 8.56 As a main commercial and tourism hub for the city, informational and directional signage on Yonge Street has an important role. Signage and wayfinding elements would be strategically placed to optimize visibility while designed to complement or integrate with the streetscape environment. Information/Wayfinding pillars would be located on Yonge Street close to each major east-west cross street.
- 8.57 The combination of visual cues in the proposed pedestrian zones of Yonge Street, including the roll curbs, paving treatments, lighting, and half-barriers will serve to provide clear physical and visual cues of a street space that signals drivers, cyclists and pedestrians to proceed with caution. If additional temporary or permanent signage is deemed to be necessary, it would be designed to be integrated into pavement or curbs, or on lighting poles. To avoid visual clutter and unappealing elements in the streetscape, conventional traffic signage would be avoided and only used as a last resort.

Tree Grates

8.58 Due to the limited space in the Yonge Street right-of-way and the large pedestrian volumes, it is expected that all tree planting on Yonge Street will use in-ground pits in hard surfaces, potentially using metal tree grates. Soil cells will be required that meet the performance criteria in the City's specifications.

Street Lighting

- 8.59 High quality lighting is proposed as a Design Element to enhance the aesthetic feel of the corridor, in support of Yonge Street's iconic status and to elevate its physical form. The lighting would serve both functional and aesthetic purposes, minimizing visual clutter while harnessing the opportunity for lighting to ensure safety, support events and enhance flexible programming opportunities, aid wayfinding and highlight the landmark qualities of the exterior spaces and building facades. At the same time, street lighting should be designed at a height and luminosity that achieves the technical standards for safe illumination of the entire roadway while minimizing the overall number of poles, with pedestrian fixtures oriented towards the pedestrian clearway areas.
- 8.60 The Design Team has undertaken a preliminary design exercise for the lighting to better understand how lighting fixtures could be placed and to establish the feasibility of pole placement within the congested underground utilities to be found in Yonge Street.
- 8.61 A roadway luminaire with a mounting height of 9.1m and a pole spacing of roughly 50m on both sides of the street was found to be ideal for optimal lighting, if employed with LED luminaires. To minimize street furniture, a joint-use pedestrian and roadway lighting pole has been considered, with an additional luminaire to light the sidewalks mounted on each pole at a height of 6.1m. This mounting height will minimize light trespass onto the buildings along Yonge Street and achieves a good lighting uniformity throughout the space that avoids dark spots. At the intersections, a higher wattage roadway luminaire would be used to provide increased lighting levels for increased visibility and pedestrian safety.
- 8.62 The exact configuration of lighting poles and luminaires will be developed further during the detailed design phase and take account of maintenance requirements and responsibilities for power supply.

Public Art

8.63 The Toronto Official Plan encourages the inclusion of public art in all significant developments across the City. Public art will support the Project Objectives and an allowance has been made of 1% of the construction cost for this. The location and form of the artwork will be developed as part of the detailed design process.

Road Safety

8.64 In June 2018, City Council authorized funding to achieve a higher level of road safety along the city's designated cultural corridors, including Yonge Street between Queens Quay and Davenport Road. Funding was used to produce a "Vision Zero Road Safety Plan" and work commissioned to conduct a road safety audit for Yonge Street. This audit studied existing road facilities to identify safety issues and deficiencies for all road users, based upon traffic and collision data and field visits, identifying short and long-term mitigating countermeasures.

8.65 The Design Team reviewed the audit and incorporated the recommendations into the development of the Alternative Design Concepts.

Cycling Infrastructure

8.66 It is intended that cycling would be permitted along the full length of Yonge Street, between College Street and Queen Street, including within any potential future pedestrian priority zones. The pedestrian focussed design of the street will reduce vehicle volumes and speeds, making the environment amenable to cycling. Provision for cycle parking in the activity zone and bike share locations will be developed during the detailed design process. The City's standard post-and-ring or equivalent will be explored for bicycle parking.

Subway Stations

8.67 No changes to subway infrastructure are proposed in the Preferred Design Concept, including all entrances and exits associated with the College, Dundas and Queen stations. Works are currently underway at College to expand the station concourse and improve accessibility that is separate from the yongeTOmorrow project. The Design Team has liaised with the College Station team to ensure that the proposals are mutually compatible.

Transit Stops

- 8.68 In addition to the Yonge Street subway line, Yonge Street is currently served by the 97B bus on weekday mornings and afternoons, operating at a 30 minute frequency in a northbound and southbound direction. It runs from Queens Quay to Davisville Station. In the Preferred Design Concept, this service would be discontinued or re-routed.
- 8.69 No changes are proposed to the 320 night bus or subway replacement shuttle buses, as the retention of these services is a key requirement for TTC. The 320 Night Bus runs when the subway (TTC Line 1-Yonge University) is not in operation, overnight from approximately 1 a.m. to 6 a.m. It operates both northbound and southbound. On Sunday morning, due to the late opening of the subway, the night bus runs for an additional 2 hours from 6.30 a.m. to 8.30 a.m. This route serves approximately 1,400 passengers on a typical weeknight.
- 8.70 The Preferred Design Concept rationalizes the bus stops between College Street / Carlton Street, reducing the current 14 stops down to eight, located at the major intersections of College Street, Gerrard Street, Dundas Street and Queen Street. The six deleted stops are typically located midblock and would be predicted to have very low usage numbers overnight.
- 8.71 East-west transit services and stops are unaffected by the proposals.

Accessible Transit

8.72 Accessible transit (Wheel-Trans) provision would be subject to further discussion as part of developing the operational strategy for the project.

Loading, Deliveries and Parking garages

8.73 Access to all existing laneways, driveways, parking garages and loading docks would be maintained in the Preferred Design Concept, although routes to and from these locations could be altered by the adopted operational strategy.

8.74 Curbside activity zones to support deliveries, loading, pick-ups and drop-offs on Yonge Street itself will be located based on field observations, ride-hail data, and the location of adjacent tourism and entertainment sites and subject to further consultation.

Emergency Service Access

8.75 The Preferred Design Concept has been developed in consultation with Fire, Police, and Paramedic Services to ensure access is maintained for emergency services. Emergency service vehicles would be permitted to enter any Pedestrian Priority zones proposed as part of the operational strategy. The proposed roadway curbs are readily mountable to provide additional space for vehicles to pull off the roadway and make way for emergency service vehicles to pass.

Utilities

- 8.76 Yonge Street between Queen Street and College Street contains a typical range of city utilities, complicated by the presence of the Line 1 subway structure that runs along the centre of the street at varying depths. Figure 8-10 shows the typical layout of existing utilities and the subway tunnel in relation to the Preferred Design Concept.
- 8.77 The utilities are:
 - Combined sewers on either side of the subway, located underneath the sidewalks and at a considerable depth below ground level
 - A variety of electricity distribution conduits, both underneath the roadway and the sidewalk, at depths of about 1m
 - Two medium sized watermains, generally either side of the corridor and within the roadway, but above the subway box. Generally, 2m depth
 - A medium sized gas main, generally in the centre of the roadway and at 1.5m depth
 - Various telecommunications conduits, generally within sidewalks and at a depth of 1m
 - Various abandoned lines
 - Various lateral connections into buildings (not shown)
- 8.78 In addition to the abandoned lines identified from record drawings, the ground investigation work completed for this project date indicates that there are numerous abandoned utilities within the corridor that may not have been identified on record drawings.



Figure 8-10: Typical layout of existing utility apparatus (Preferred Design Concept shown for context)

Design Considerations

- 8.79 Discussions have been held with all the utility providers with apparatus in the corridor to determine their needs for the Preferred Design Concept.
- 8.80 The two watermains that run along the corridor are life expired and have been identified for replacement, irrespective of the yongeTOmorrow project. The Preferred Design Concept includes street trees in the Activity Zone on either side of the roadway, requiring underground space for the soil and roots. This space, in general, coincides with the watermains and some section of electrical conduit. It is therefore proposed to relocate the watermains at the time of their renewal away from the street trees, and to investigate in detail the relocating of electrical conduits as part of the detailed design process.
- 8.81 Toronto Water has indicated that they wish to rehabilitate the sewers in the Study Area in advance of the yongeTOmorrow roadworks to extend their service life. The work would comprise localized *in-situ* relining of individual sewers, working from existing manholes and with minimal impact upon the existing street operation and traffic. This work would be independent of the Preferred Design Concept.
- 8.82 Streetlighting columns and their electrical supply and storm-sewer catch-basins would also need to be relocated to suit the new curb edge.
- 8.83 The Preferred Design Concept would not significantly reduce the cover to utility apparatus by lowering the elevation of the finished road surface. Further work to establish the exact location and depth of utility apparatus will be undertaken as part of the detailed design phase to facilitate the design for any relocations and protection measures. Potential measures for utilities are summarized in Table 8-2.

Table 8-2: Summary of Utility Impacts

Utility	Impact
Sewers	Pipe relining to extend lifespan – carried out independently from the Preferred Design Concept proposals. Specialist work that would have minimal impact upon the existing street operation and traffic.
Stormwater	Relocation of catch basins to new curb alignment
Water (potable)	Renewal and potential relocation of watermains away from proposed street trees. Relocate hydrants and valve chambers to match new road alignment and elevations. Renew lateral supply pipes into buildings as required.
Toronto Hydro Electric System - distribution	Potential to relocate or protect conduits from proposed street trees
Toronto Hydro Electric System – street lighting	Renew and relocate to suit new street lighting installation
Toronto Hydro Electric System – high voltage distribution	No significant impact (one east-west cable)
Telecommunications	Minor adjustments to relocate or protect conduits from proposed street trees
Gas	No change (abandoned lines may be removed to facilitate placement of street trees)
Emwave Steam	No significant impact (one east-west pipe)

Costs

- 8.84 The cost estimate for the Preferred Design Concept is \$70.5m, including the renewal and relocation of the two watermains and other utility works.
- 8.85 Yonge Street is 'life expired' in terms of the City's assets in the corridor and without the yongeTOmorrow proposals it would ordinarily be identified for comprehensive rehabilitation on a like-for-like basis. In addition to this, the two main water distribution pipes along the corridor have been identified as requiring replacement irrespective of the yongeTOmorrow project. Without the yongeTOmorrow project, the City would need to spend \$22m on these works.

Operating Cost

- 8.86 Implementing the Preferred Design Concept would require an operating regime exceeding the current standard of provision. Activities include snow clearing, sweeping, cleaning, waste management and tree/planter maintenance. With the project in place, it would be reasonable to assume that some operations will need to be expanded, including city funded public realm activations and enforcement of by-laws.
- 8.87 Following construction, an interim education strategy would be considered to support the operational changes on Yonge Street. The street would also be monitored post implementation for any necessary operational or programming adjustments.

Detailed Design, Construction, and Post Construction

- 8.88 The next phase of the project will undertake the detailed design of the Preferred Design Concept along with construction phasing and schedules. The next phase will also establish plans for operations, maintenance and public realm programming.
- 8.89 A likely construction timeline, contingent upon funding approval and coordination with other capital works in the neighbourhood would be for detailed design to occur over a period of approximately 2 years, and construction over approximately 3 years.

Construction Sequence

- 8.90 Construction will cause disruption to users of the corridor and the numerous residential and business activities that front onto Yonge Street and its side streets. A comprehensive Traffic Management Plan will need to be developed as part of the overall Construction Management Plan (CMP) during the detailed design phase of the project, with the objective of accommodating the needs of stakeholders and minimizing disruption and adverse effects as far as is reasonably practicable.
- 8.91 The Preferred Design Concept requires:
 - Relocating the curbs and consequent regrading of levels
 - Reconstruction of roadways and sidewalks
 - Work to utility apparatus, including renewal and relocation of watermains and relocation of electricity and telecoms conduits
 - Installation of trees in soil cells
 - Modifications to drainage catch-pits and connections
 - Replacement of all street furniture, traffic signs, lighting equipment and traffic signals
- 8.92 The majority of the Yonge Street corridor is fronted by commercial and retail uses, with frequent doorways and pedestrian entrances on both sides of the street. South of Gerrard Street the corridor is 20m wide and north of Gerrard Street it is 26m wide.
- 8.93 Access to doorways will generally be required at all times, with the exception of very localized works to individual entrances that will by necessity take place when entrances are not in use or periods of very low use (for example, overnight). During peak hours, both sidewalks along Yonge Street will need to remain accessible to the public.
- 8.94 Although the majority of businesses along the street have provision for servicing at the rear of the premises or from adjacent side-streets, it is likely that the Traffic Management Plan will seek to maintain vehicular access, with any closures being of short duration and localized in nature. This is also likely to be a requirement for uninterrupted emergency services access.
- 8.95 Additional constraints are imposed by the need to carry out work to the utilities in the corridor, principally the requirement to replace and relocate two watermains that run along the corridor on either side of the street. This will require detailed programming to ensure continuity of water supply, replacement of lateral feeds to buildings and the need to avoid exposing water apparatus to freezing winter conditions. To minimize the overall construction duration, it is anticipated that the watermain works will be carried out as part of the roadworks.

- 8.96 The works will require space for a construction compound, with delivery and set-down areas. Due to the downtown nature of the location, finding adequate space for these activities will be a key consideration in the CMP. No sites or areas have been identified at this stage.
- 8.97 Yonge Street at present typically has a "No Stopping" by-law between 7.30 a.m. and 9.30 a.m., with "No Parking" outside of these times. In practice, this allows for some deliveries and servicing to take place from the street at off-peak times. Any reduction of traffic lanes during construction would need to consider this. The Traffic Management Plan as a minimum needs to facilitate a safe method of working for the Contractor and users of the corridor, but also should seek to minimise the construction duration, minimise disruption and manage any traffic delays and diversions to an acceptable level. This will be difficult to achieve in practice and a balance will need to be struck amongst competing objectives, considering the views of stakeholders and effect on costs. Intersections will need to be considered on a case-by-case basis, allowing for the necessary reconstruction, utility works and the need to keep lanes and streetcar tracks open.

Advance Works

- 8.98 In developing the design, the Project Team has identified the following activities that may need to take place in advance of the main construction activity:
 - Sewer relining: Toronto Water has indicated in discussions that they wish to line the existing sewers along Yonge Street to extend their service life. This would be carried out independently and is relatively straightforward in that it requires small work areas between consecutive sewer manholes
 - Utility Investigation: The detailed design team is likely to require more information on underground utilities for the design, requiring physical trial pits to investigate the depth and location of utility apparatus. This is likely to be carried out in advance and require a series of localized work areas with relatively low impact
 - Diversion of bus services: The Preferred Design Concept stipulates the suspension or diversion of daytime bus services along Yonge Street. Given the level of disruption anticipated in the main construction work, these proposals are likely to come forward and be implemented in advance of the construction work. Overnight bus services that provide an alternative to the subway when it is not running are proposed to be retained, however, these will be subject to the requirements of the Traffic Management Plan, requiring diversion or temporary suspension in parts to suit the construction schedule
 - Cycle provision: During the construction work, space for cycling along Yonge Street will be limited. The Preferred Design Concept recommends the provision of additional cycle lanes on University Avenue to supplement the cycle provision on Yonge Street, and this could be brought forward in advance of the construction work to mitigate against the loss of cycle provision during construction

Access during construction

8.99 The Traffic Management Plan is likely to impose constraints on deliveries, pick-up/drop-off, ride hail, etc. This will be disruptive and may require additional provision for pull-off space where this is absolutely necessary. A possible alternative to this, typically employed where a full street closure is required (for example, to install a new streetcar route) is for the Contractor to assist with deliveries and servicing out-of-hours, using marshals or by hand cart.